

# **CLAIMS**

1. A method of treating indoor household surfaces comprising:  
 applying to all or part of the indoor household surface a first coating  
 composition to form a protective layer, wherein the coating composition  
 is essentially free of pigment, and,  
 subsequently removing any soil or stain from said coated surface by  
 applying to the coated surface a cleaning treatment or composition.
2. The method of Claim 1 wherein the coating composition comprises a  
 fluorinated compound.
3. A method of protecting an indoor household surface selected from: a  
 painted wall, wall paper and wall cloth, from stain, soil or other degradation,  
 comprising applying to all or part of the indoor household surface a  
 composition comprising a fluorinated compound.
4. The method of Claim 3 wherein the fluorinated compound is a fluorinated  
 polymer.
5. The method of Claim 3 wherein the fluorinated compound is a  
 perfluorinated polymer.
6. The method of Claim 3 wherein the fluorinated compound is functionalized  
 to form a covalent or non-covalent bond with the material of the surface to  
 be treated.
7. The method according to Claim 6 wherein the fluorinated compound  
 comprises one or more functional groups selected from the group  
 consisting of: silane, phosphate, carboxylate, alkylamide, polyether,  
 sulphonate, sulphate and amine.

8. The method of Claim 3 wherein the fluorinated compound has an average molecular weight of between 400 and 4,000.
9. The method of Claim 3 wherein the fluorinated compound is selected from the group consisting of fluorinated polymers having the formula:  $X-CF_2-(O-C_2F_4)_n-(OCF_2)_m-OCF_2-Y$ ;  $Cl-(C_3F_6O)_n-CF_2-X$ ;  $Cl-(C_2F_4O)_n-CF_2-X$ ; or  $X-CF_2-(O-C_2F_4)_n-(OC_3F_6)_p-(OCF_2)_m-OCF_2-Y$ , and (partially) hydrogenated forms thereof, wherein m, n and p represent, independently, integer numbers, including 0, m+n or m+n+p being different from 0, wherein X and Y are, independently,  $CF_3$  or an hydrogenated form thereof, a hydrogen atom, a chlorine atom, or a functional group or a different polymer sequence.
10. The method according to Claim 3 wherein the composition further comprises one or both of a fluorosurfactant and a solvent.
11. The method of Claim 10 wherein the fluorosurfactant comprises a functional group selected from sulphonate, carboxylate, sulphate and phosphate functional groups.
12. The method of Claim 11 wherein the composition comprises a fluoropolymer with a terminal silane functional group and a fluorosurfactant with a sulphate, sulphonate or phosphate functional group, or combinations thereof.
13. The method according to Claim 3 wherein the composition further comprises one or more agents selected from the group consisting of: surfactants, perfumes, stabilizers, emulsifying agents, polycarboxylate polymers such as polyacrylates, methacrylates or polyurethanes, thickeners, antistatic agents, UV light screening agents, optical brighteners, non-fluorinated silicone compounds and film-forming polymers, alone or in various combinations thereof.

14. The method according to Claim 3 wherein the composition is essentially free of pigment and comprises, by weight:
  - 0.01-40% of a fluorinated compound;
  - 0-40% of a fluorosurfactant;
  - 5 0-30% of a surfactant;
  - 0-30% of a solvent, in particular an alcohol, ether or ester;
  - 0-50% of a non-fluorinated silicone compound;
  - 0-50% of a polycarboxylate polymer; and
  - 20-99.9% of water.
- 10 15. The method of Claim 14 wherein the composition further comprises an optical brightener.
16. The method according to Claim 3 wherein the composition is applied by a
  - 15 sprayer, brush, roller, sponge, wipe or a mop.
17. The method according to Claim 3 wherein the surface is all or a portion of an indoor household wall such as a painted wall, wall paper or wallcloth.
- 20 18. A method of forming a transparent film at the surface of an indoor painted wall, wall paper or wallcloth, said method comprising applying a composition comprising a fluorinated compound to all or part of said surface.
19. The method of Claim 18 wherein said fluorinated compound protects said
  - 25 surface or material from stain, soil or other degradation.
20. A method of cleaning an indoor household surface, wherein the surface has been treated by a method of Claim 1 wherein said cleaning composition comprises at least one of a solvent and a surfactant.
- 30 21. The method of Claim 20 wherein the cleaning composition comprises a fluorinated compound.

22. The method of Claim 21 wherein the fluorinated compound is a (per)fluoropolyether (non-functionalized) of one of the general formulas: (I)  $\text{CF}_3\text{O}-(\text{CF}_2-\text{C}_2\text{F}_4-\text{O})_n-(\text{CF}_2\text{O})_m-\text{CF}_3$ ; (II)  $\text{HF}_2\text{C}-\text{O}-[(\text{CF}_2-\text{CF}_2-\text{O})_n-(\text{CF}_2-\text{O})_m]-\text{CF}_2\text{H}$ ; hydrogenated forms thereof.
23. A composition suitable for treating indoor household walls or materials, the composition comprising a fluorinated compound with a terminal silane functional group and a fluorosurfactant with a sulphate, sulphonate, carboxylate or phosphate functional group.
24. The composition of Claim 23 further comprising one or more agents selected from the group consisting of: surfactants, perfumes, stabilizers, emulsifying agents, polycarboxylate polymers such as polyacrylates, methacrylates or polyurethanes, thickeners, antistatic agents, UV light screening agents, optical brighteners, non-fluorinated silicone compounds and film-forming polymers, alone or in various combinations thereof.
25. The composition of Claim 23 further comprising an optical brightener.
26. A composition suitable for cleaning treated indoor household walls or materials comprising:  
 one or more perfluoropolyether and hydrogenated perfluoropolyethers of at least one of the general formulas (I) and (II) in Claim 22;  
 one or more fluorosurfactants such as perfluoropolyether alkylamide-functionalized;  
 a solvent comprising one or more of the following agents: ethers, n-butoxy-propoxy-propanol, di(propylene glycol)methylether, glycols, alcohols, hexane or other hydrocarbon solvents; and  
 one or more non-fluorinated surfactants.

27. A combination of products for treating household surfaces or material, comprising, separately formulated:

- 5 a protective composition, wherein said protective composition is essentially free of pigment and comprises a fluorinated compound; and  
a cleaning composition comprising a solvent and/or a surfactant.

28. The combination of products of Claim 27 wherein the cleaning composition comprises a fluorinated polymer.

10 29. A combination of products for treating household surfaces or material, comprising, separately formulated:

- a protective composition comprising a functionalized perfluoropolyether;  
and  
a cleaning composition comprising a fluoropolymer.

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30. A kit for treating household surfaces or material such as painted walls, wall paper and wallcloth, comprising, separately formulated:

- an essentially pigment-free protective composition comprising a fluorinated compound;  
20 and  
a cleaning composition adapted for use with the protective composition.